

Safety Data Sheet



1. Identification of the Substance/Mixture and the Supplier

Supplier : National Institute of Advanced Industrial Science and Technology (AIST)
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Identity of Substance/Mixture : Certified Reference Material NMIJ CRM 1001-a~1005-a
 Fe-Cr alloy (Cr 5%, 15%, 20%, 30%, 40%)
 Recommended Use of the Chemical and Restriction on Use : Intended use for this CRM is the calibration of instruments, or confirming the validity of analytical methods or instruments during analysis of content of the chromium in steel and similar materials by electron probe micro analyzer (EPMA). Do not use this reference material for other purposes than testing/research.
 This CRM is a reference material (specified in the Japanese Industrial Standard (JIS) Q 0030).

2. Hazards Identification

GHS Classification : Respiratory organ sensitization : Class 1
 Skin sensitization : Class 1
 Germ-cell mutagenicity : Class 2

GHS Label Element:



Signal word : Danger
 Hazard and toxicity: May cause allergic reaction on skin.
 May cause hereditary disorder.
 If inhaled, may cause allergic reaction, asthma or breathing difficulty.
 Other hazards : Possibly irritates eyes in the form of powder
 Possibly generates metallic fume fever.
 Possibly irritates respiratory tract.
 Precautionary statement : [Preventive Measure]
 Use protective gloves

Do not take out the contaminated clothes from the work area. Wash the contaminated clothes if reusing.

Use respiratory protective equipment if the ventilation is not sufficient.

Obtain an instruction manual before using. Do not handle the material before reading and understanding the safety precautions fully.

Use personal protective equipment as necessary.

Avoid inhaling dust/fume/gas/mist/vapor/spray.

[Response]

If inhaled: If having difficulty breathing, move to get a fresh air and take a comfortable posture to ease breathing and rest.

If an unusual respiratory tract symptom appears, contact medical physician.

If on skin: Rinse with plenty of water using soap. If skin irritation or rash develops, seek medical advice.

If exposed or concerned about the exposure: Seek medical advice.

[Storage]

Transfer to dry atmosphere such as desiccator, etc. and store at room temperature.

Store in a locked place or cabinet.

[Disposal]

Dispose of the content and container according to the laws and regulations of the country and an ordinance of the local government.

Hazardous and toxic properties not specified in the above are neither the object of the classification nor classifiable

3. Composition/Information on Ingredients

Substance or mixture	: Mixture (Alloy)
Chemical name	: Iron-chromium alloy
Content	: Chrome : 5.00 %, 14.96 %, 19.87 %, 29.84 %, 39.69 % Iron : The rest of the composite
Reference Number in Gazetted List in Japan	: Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -
CAS No	: Chrome: 7440-47-3, Iron: 7439-89-6
Hazardous component	: Chrome

4. First-aid measures

If in eyes	: Rinse well with clean water. Seek medical advice.
If on skin	: Rinse well with clean water. Take off the contaminated clothes and shoes, etc. and seek medical advice.
If inhaled	: If having difficulty breathing due to grinding, apply

- respiratory assistance and seek medical advice promptly.
- If swallowed : Do not force vomiting, seek medical advice.
- Anticipated acute and delayed symptom : Diarrhea, nausea, loss of consciousness, vomiting.
- Most important characteristics and symptoms : Skin sensitization
- Measures to be taken to protect the person applying first aid : Use personal protective equipment.

5. Fire-fighting Measures

- Extinguishing media : Use general extinguishing agent.
- Specific hazards at the time of fire : Neither flammable nor combustible under normal circumstances. May form irritating or toxic fume (or gas) at the time of fire.
- Specific extinguishing measures : Remove any ignition source from the seat of fire and extinguish using appropriate extinguishing agent. Transfer the movable container to a safe place promptly. If impossible to transfer, use water spray to cool the periphery.
- Protecting fire-fighting personnel : Extinguishing activities on windward side, avoid inhaling toxic gases.
Use appropriate protective equipment such as fire-resistant clothing, protective clothing, air-breathing apparatus, rubber gloves, etc.

6. Accidental Release Measures

- Personal precautions : Being an allergic substance, use appropriate protective equipment when handling.
- Protective equipment and emergency procedures : If released indoors, ventilate well until the treatment is completed.
Rope-off the leaked area and restrict access only to the authorized persons.
When handling, use appropriate protective equipment to avoid the airborne droplets, etc. adhering to skin and prevent inhaling dust and gas.
Evacuate the people on the leeward and work on the windward side.
- Environmental precautions : To prevent causing environmental impact, do not release the spilled material into rivers, etc. directly.
- Recovery, neutralization : Collect the spilled material in an empty container.
- Measures to prevent secondary accident : -

7. Handling and Storage

Handling

- Technological counter-measures : Do not handle directly with bare hands
- Local ventilation/general ventilation : When generating dust, etc. use ventilation system.
- Precautions for safe handling : Do not handle before reading and understanding all the safety precautions provided.
Take off the contaminated clothes when going out from the work area.
Use appropriate personal protective equipment as necessary.
Avoid inhaling dust/fume/gas/mist/vapor/spray.
Wash the contaminated clothes before reusing.
Keep away from water and acid. Avoid high-temperature, high-humidity environment.

Storage

- Appropriate condition : Transfer to a dry atmosphere such as desiccator, etc. and store at room temperature.
 - Material for safe packing : Plastic container
- ※ Please refer the certificate about the details of appropriate storage conditions and precautions for the use as reference material.

8. Exposure Controls/Personal Protection

Administrative level

- Effluent standard 2 mg/l(Cr) and under

Occupational exposure level (Chrome)

- ACGIH TLV-TWA(2000) : 0.5 mg/m³
- Japan Society for Occupational Health : 0.5 mg/m³

Occupational Health

Recommended Reference Value (2000)

- OSHA PEL TWA : 1 mg/m³

Facility engineering

- Ventilation/exhaust : Local exhaust ventilation system or general ventilation system.
- Safety management, gas detection : Measuring instrument, gas detector.
- Storage precaution : Keep away from acids.

Protective equipment

- Respiratory organ : Air respirator
- Hands : Protective equipment
- Eyes : Safety goggle
- Skin and body : Protective clothing

9. Physical and Chemical Properties

• Appearance, etc.	: Solid
• Color	: No data
• Odor	: No data
• pH	: No data
• Melting point	: No data
• Boiling point	: No data
• Flashing point	: No data
• Explosive range	: No data
• Vapor pressure	: No data
• Relative vapor density(Air=1)	: No data
• Specific gravity or bulk specific gravity	: No data
• Solubility	: No data
• <i>n</i> -Octanol/water partition coefficient (Log Po/w)	: No data
• Auto-ignition temperature	: No data

10. Stability and Reactivity

- ◇ Stability
 - Stable under normal condition
- ◇ Reactivity
 - Small in reactivity
- ◇ Conditions to avoid
 - Contact with water and oxidizing substance may cause rust on the material.
- ◇ Hazardous decomposition products
 - No data available

11. Toxicological Information

Respiratory organ sensitization	: Considered as a possible sensitization to humans, Japan Society for Occupational Health.
Skin sensitization	: ECETOC Technical Report 45 (1992) reported that a skin sensitization cannot be observed in the form of chromium metal, chromium alloy, and chrome plating, but possible skin sensitization when exposed to dissolved chromium ion due to humidity. Decidedly a skin sensitization substance to humans, Japan Society for Occupational Health.
Mutagenicity on germ cells	: IARC 49 (1999) reported the positive results from in vivo somatic cell mutation tests (chromosomal defect of peripheral blood lymphocyte in rats)
Particular target	: Possible cause of metallic fume fever reported in SITTIG (47th,

organ/systemic toxicity (Single exposure) 2002), HSFS (2000)
Respiratory tract irritation reported in HSDB (2005)

12. Ecological Information

Degradability, concentration

•No data available

Bioaccumulation

•No data available

Ecotoxicity

•No data available

13. Disposal Considerations

•Treat as an industrial waste based on Waste Disposal and Public Cleansing Law

14. Transport Information

UN Number : Not applicable

UN Classification : Not applicable

Material name : -

Container grade : -

ICAO/IATA : -

Marine pollutant : -

Precautions : Avoid direct sunlight and transfer with care not to spill/leak by dropping or falling, etc. and beware of fire sources and humidity.

15. Regulatory Information

◇Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR system Pollutant Release and Transfer Register)

•Class 1 Designated chemical substance

◇Labor Standards Act

•Disease causing chemical substance

◇Air Pollution Control Act

•Hazardous air pollutant

◎ **This SDS is originally prepared for the use of the material in Japan, thus the stated laws and regulations are stipulated and carried out in Japan. The use of the material in other countries should be referred to and by application of the relevant laws and regulations of the country in which the material will be used.**

16. Other Information

References

•Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR system Pollutant Release and Transfer Register), Complete Substances Data subject to

PRTR, MSDS (Revised Edition) (2001)

Other

The information in this document is not intended to be exhaustive and is based on currently available information and data. The measures given in this document are applicable only to normal handling conditions. When handling this reference material under special conditions etc., it is recommended to take safety measures appropriate to each specific application and context of use. This document is intended to provide information and not intended to guarantee anything in handling this reference material.
